Honors Principles of Engineering Summer Work

Supply List:
A Flashdrive!!
1 inch 3-ring binder
3 holed-lined paper
10 dividers
pencils
pens
steel ruler
calculator with sine, cosine, tangent functions
PLTW Engineering Notebook (you may already have one or you can buy one from me for $3)

Summer Work:
I. Watch the "Bridges of New York" documentary at https://www.youtube.com/watch?v=wMCuo_DwIlk.
   1. Which bridge do you travel over most often?
   2. How do engineers use triangles in their bridge designs? Be complete and thoughtful in your answer. More research may be needed.

   1. How are robots used in the work place?
   2. What are the robots features that make it so effective?

   1. List the steps of development of the robotic arm.
   2. Was Enables robotic arm design patented? Why?
   3. Would you like to be part of the Enable the Future and the work they do? Join the 3-D Print Club!

IV. Watch the National Geographic Video "I Didn’t Know That: How Rockets Work" at http://video.nationalgeographic.com/video/i-didnt-know-that/idkt-how-rockets-work
   1. If we made a rocket with only water under pressure to act as "fuel" how would it propel itself forward?
   2. Which of Newton's Laws does this illustrate?

V. Read the article on bridge failure of the Nipigon Bridge at https://www.cbc.ca/news/canada/thunder-bay/nipigon-river-bridge-closed-transcanada-1.3397831. Answer the following questions in complete sentences:
   1. Who wrote the article? Is this a reliable source?
   2. Where is the Nipigon Bridge?
   3. Why does its failure impact the people in the area so badly?
   4. What went wrong?
   5. What can be done to correct the problem?

Bring this completed assignment to our first class in the fall. See you then! Have a great summer!